

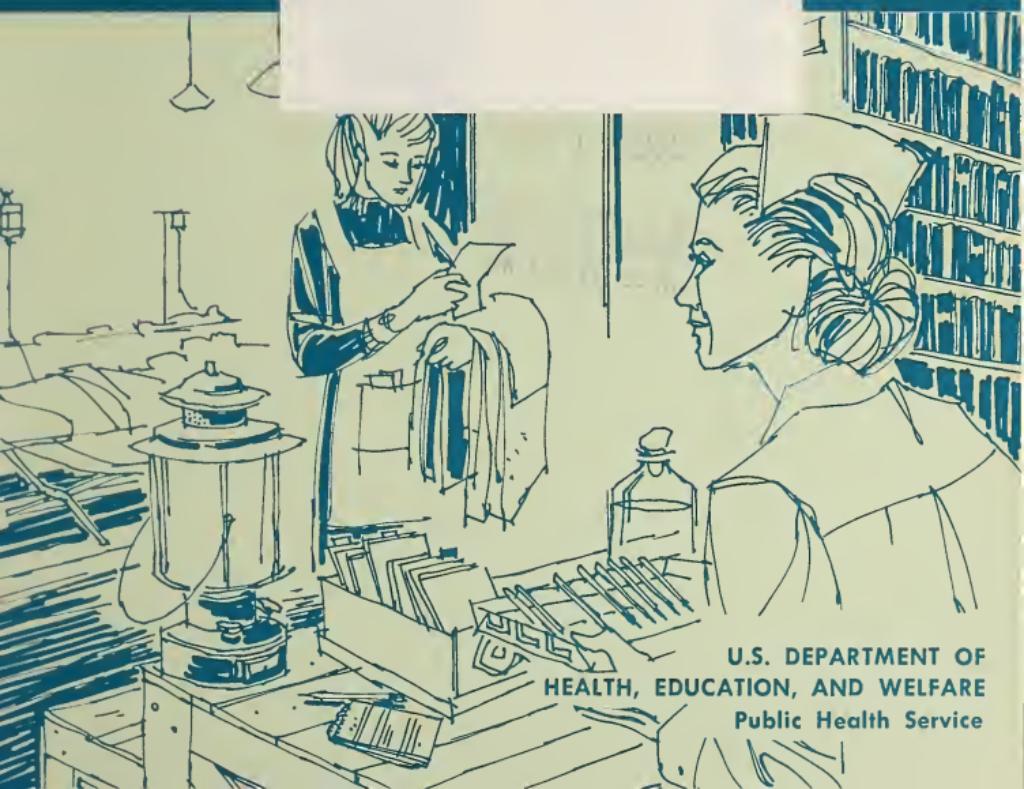
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Health Mobilization Series

F-12

Nurses' Ward Management Guide for the Packaged Disaster Hospital

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CIRCULATE



U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service

**Nurses'
Ward Management
Guide for the
Packaged
Disaster Hospital**

**U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE**

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Division of Health Mobilization

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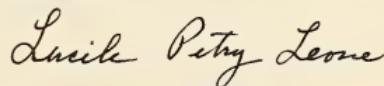
FOREWORD

I hope that this manual will inspire nurses everywhere to prepare for service in disasters which involve large numbers of people. While the activities of a Packaged Disaster Hospital are emphasized, the principles presented in this manual can be useful to nurses who must manage nursing services in any kind of a hospital facility in a disaster situation.

Following a major disaster, the efforts of every citizen will be needed if a community is to recover. With a great proportion of the population sick or injured, the speed with which patients can be restored to useful community life is a major factor in how quickly the community can return to normal.

The nursing staff of a Packaged Disaster Hospital may have worked as a team in predisaster training exercises. On the other hand, disaster circumstances may bring together a staff largely unfamiliar with one another. In either case, leadership and management will be essential to the hospital's effective operation. Nurses should become familiar with the PDH and think about what they would do if they were called on to manage nursing services in a disaster.

The principles presented in this manual are intended to stimulate thinking and planning and to provide a starting point for coping with a situation which might otherwise seem almost hopeless. The examples are given to show what can be done with whatever is at hand. I commend the study of this manual to all nurses who wish to fulfill their responsibilities as good citizens and as professional health leaders.



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CONTENTS

	Page
INTRODUCTION.....	1
THE DISASTER HOSPITAL CONCEPT.....	2
A. A Master Plan.....	2
B. Staffing.....	3
C. Training.....	5
D. Scheduling.....	6
WARD MANAGEMENT.....	7
A. The Plan.....	7
B. Ward Layout.....	8
C. Admissions.....	8
D. Bedside Care.....	8
E. Treatment and Medications.....	9
F. Records.....	9
G. Instructions on After-Care.....	10
H. Ordering Supplies.....	10
I. Ward Environment.....	10
TEAM NURSING.....	13
A. Predisaster Practice.....	13
B. On-the-Spot Organization.....	13
C. Assigning Duties.....	14
D. Assignments by Function.....	14
THE WARD SCHEDULE.....	15
A. Personnel.....	15
B. Activities.....	16
IMPROVISATION.....	19
A. Newspapers.....	19
B. Tin Cans.....	20
C. Cardboard Boxes.....	22
D. An Emergency Wangensteen Apparatus.....	24
APPENDIX—Preparatory Reading List.....	27

INTRODUCTION

In the event of a thermonuclear attack on the United States, a major proportion of existing hospital facilities would be destroyed. At the same time, there would be an unprecedented need for hospital beds and services. While in no way comparable in scope, major peacetime disasters such as earthquakes, hurricanes, floods or fires can create a briefer but similar disparity between need and available services within a single locality.

To cope with such a disparity, Packaged Disaster Hospitals (PDH's)¹ have been assembled by the Federal Government through the Public Health Service and loaned to States where they are stored at the community level in or near a building suitable for conversion to a hospital in an emergency. Specifically, the PDH is a unit of hospital supplies, equipment, and pharmaceuticals packed in boxes. In a disaster, it can be unpacked and set up in a preselected building such as a school or an armory. When set up as an independent facility, it includes the following functional sections: admitting and triage, operating rooms, wards, central supply, laboratory, pharmacy, and X-ray. There are provisions for auxiliary electric power and water supply. The PDH supplies and equipment can also be used to augment those of an existing hospital in permitting it to expand its services. They can also be divided in order to equip several aid stations.

The principles of nursing management presented in this book can be applied by nurses assigned to staff a PDH as well as those working in any facility with a vastly increased patient load.

¹ Formerly called Civil Defense Emergency Hospitals.

THE DISASTER HOSPITAL CONCEPT

The type of disaster which necessitates the use of a Packaged Disaster Hospital will make relentless demands on the hospital staff. Everyone will be under severe stress. They will have to work long hours. Only a basic minimum of supplies and equipment will be available. Furnishings taken for granted in a modern hospital will have to be improvised or done without.

- Nurses, accustomed to giving thorough care to individual patients will find themselves called on, instead, to manage the care of large numbers of patients by directing aides and helpers in procedures ordinarily performed by the nurse herself. Many of these helpers will be unfamiliar with disaster procedures, possibly even with hospitals. There will almost certainly be an acute shortage of bed space and patients will have to be discharged much earlier than they would be in normal circumstances.

This manual is intended to assist nurses designated to staff a PDH in essential predisaster planning. It is a guide to the management of a single PDH ward, whether that ward is one large area or several smaller rooms. The number of wards and their size will depend on the type of building. In an armory or warehouse, large expanses of floorspace may require setting up all 200 cots in one or two large wards. In a school or office building, the floorplan may permit several smaller wards. In any case, the principles presented here will facilitate the best possible care of large numbers of acute injuries and illnesses under disaster conditions.

A. A MASTER PLAN

At the time a PDH is pre-positioned, the community leaders responsible for it should make a plan for its utilization. A nurse, to be designated as director of nursing for the PDH, should be a member of the committee which does this initial planning. An estimate of the personnel which would be available to staff the PDH should be made and, if possible, specific people should be assigned to supervisory positions. Thus, a nurse who knows she will be head nurse of a PDH ward will be able to make plans in advance for the best use of the nurses, practical nurses, medical aides, and helpers she can expect to have assigned to her unit.

1. Disaster Conditions

There is no way of accurately anticipating conditions which will exist at the time a PDH is put into operation. The situation may vary from early activation for a large number of casualties with traumatic injuries to delayed activation with fewer injuries and a greater number of illnesses. Certain generalizations, however, can be made and it is helpful in the planning stage to study predictions of the types of injuries and illnesses that can be expected in different kinds of disasters. A thorough awareness of the kinds and amounts of equipment and supplies stocked in the PDH is also necessary.²

It is expected that patients in a Packaged Disaster Hospital following a nuclear attack will be suffering from blast injuries with fractures and radiation reactions, severe physical and emotional shock, severe burns, and other acute injuries and illnesses. Those whose needs can be met by neighbor-help or self-help will not occupy hospital beds. This is an important point to remember in planning the hospital's operation.

2. PDH Activity

As the PDH goes into operation and the facts of disaster conditions replace the theories of predisaster planning, alterations in the master plan will be necessary. The whole hospital team will begin to see where needs are the greatest and the staff can be reassigned as necessary. Reassignments are more readily made and accepted when the master plan is thoroughly understood by the entire staff. For example, the operating rooms may be under intense pressure when the hospital is first activated. When this slackens, some of the operating room nursing staff can be reassigned to ward service with the understanding that these nurses will be recalled to the operating room should the need arise.

The nurse designated to manage a ward will be responsible for planning total patient care, selecting and assigning personnel to provide this care, organizing and supervising associated clerical activities on the ward, supervising the general condition of her unit, establishing and maintaining working relationships with other PDH sections, and helping patients and their families prepare for self-care after discharge.

B. STAFFING

A community's professional health personnel will be overtaxed in a disaster and there will be a limited number available to staff the PDH. The pressure of work in the first days of the hospital's activation will require

² See Health Mobilization Series F-11, Component Listing and Storage Data, Series 62000 Packaged Disaster Hospital.

the staff to work long hours to assure the availability of someone who is competent to give or direct others in giving essential patient care.

Nurses may be required to assume some medical responsibilities delegated to them by physicians and may, themselves, have to delegate some professional nursing functions to practical nurses and aides. All the personnel of a PDH must be prepared to accept responsibilities beyond their ordinary practice but they must also be prepared to relinquish those responsibilities when better qualified personnel become available.

Assignments

The mission of the PDH to give immediate care to a constant flow of acutely sick or injured patients must be kept in mind in making staff assignments. In the sorting area, patients will be assigned to appropriate wards. Ward designation immediately postdisaster will depend on the numbers of casualties and the types of injuries. In general, patients who need immediate care and have a prospect of recovery will be separated from those for whom only palliative care and treatment can be given. This sorting principle affects the staffing of the wards since the highest skilled help must be assigned to work with patients who can be expected to recover.

In the administrative plan, the head nurse of a ward is directly concerned with planning and using the services of practical nurses, medical aides, and any helpers and messengers who may be assigned to her unit. The nursing service administrator may alter the assignment of personnel to various sections depending on the workload. For instance, a heavy operating room schedule might call for taking some of the available practical nurses away from ward duty. Aides might have to run the central supply section with only one professional nurse to supervise them. If there is not sufficient professional personnel, the best trained helpers will have to be used. Where none are trained, the nurse will have to train them on the spot.

a. The head nurse

The head nurse is responsible for the total care of all patients assigned to her unit. She must designate which staff member is responsible for each aspect of this care, see that medications and treatment are given as ordered by the physician, supervise serving of meals and see that patients' other needs are met, supervise the general house-keeping in her ward, see that necessary records are kept, assign personnel hours and duties, schedule ward activities and maintain working relationships with other PDH sections.

b. The professional staff nurse

The primary responsibility of professional nurses is to see that all patients assigned to them receive the best possible care and that treat-

ment is given according to the physician's orders. They may have to delegate much patient care to the practical nurses, trained medical aides, and helpers on the ward.

c. The practical nurse

Practical nurses will help with all duties as assigned by the professional nurse or a physician, particularly those concerned with the immediate care and treatment of patients. When there is no professional nurse, the practical nurse will take over her duties.

d. The medical aide

Personnel designated as medical aides (or nurses' aides) should have had previous training and/or experience in working with patients in hospitals. They will help with bedpans, urinals, and emesis basins; feed patients; help with admission, transfer and discharge of patients. If no nurses are available to do so, they may give medications and treatments.

e. The helper

Helpers will perform essential non-nursing duties. They can transfer and escort patients, get supplies and pharmaceuticals, record and check personal property of patients, serve as messengers, housekeepers, and clerical help as their abilities permit.

C. TRAINING

When the community's master plan is completed and the PDH staff has been designated, all personnel should be trained in the aspects of setting up and operating the hospital for which they will be responsible. This pre-disaster planning and training greatly increases the efficiency with which a community can use its PDH.

While manuals, such as this one, are available for the guidance of the designated staff, nothing can substitute for actual practice. Many communities hold training exercises periodically, simulating, to a degree, problems which can be expected to occur in a disaster situation. In such exercises, nurses who will be managing PDH wards have an opportunity to see exactly what equipment is provided and how to operate it. They also can begin to appreciate how care and treatment of large numbers of patients must differ from the medical and nursing care possible under usual hospital conditions.

Training must familiarize the staff not only with principles of disaster care but also with the inescapable fact that caring for a constant flow of acutely sick and injured patients is a tiring and undramatic process which requires more endurance than heroics.

D. SCHEDULING

When a PDH is activated, a schedule of two 12-hour shifts a day will probably have to be established in order to make the maximum use of limited professional personnel. As the flow of patients and pressure of work change and the hospital settles into prolonged operation, this schedule can be altered. By that time personnel abilities and weaknesses will have become apparent and it will be easier to make assignments to cover a schedule of three 8-hour shifts.

In the first few days of disaster, many workers, especially nurses, will not want to go off duty at all as patients continue to arrive. The wise and responsible head nurse must override her staff's eager desire to keep working beyond their endurance in order to prevent the fatigue and subsequent irritability which will result—in both staff and patients. The 12-hour shift with regular rest periods is the best solution to this problem because even the most dedicated person will usually admit the need to get some sleep after 12 hours of steady work.

Actually, it is often in the later cleanup period following a disaster when the greatest skills and freshest approach to problems are needed. If everyone is physically and emotionally exhausted by then, sustained operation of the hospital is much more difficult.

WARD MANAGEMENT

A. THE PLAN

The nurse in charge of a ward will find that the principles of management used in any kind of business apply equally well to managing a ward. First, she must have a plan which indicates, simply, what must be done, who is to do it, and how it is to be done. This plan must be understood by everyone involved. She must then see that this plan is carried out. Such a plan must be based on clearly defined objectives and, of course, must be in harmony with previously determined policies and regulations of the entire PDH plan. For disaster nursing, the following objectives are essential:

1. Lifesaving measures must be applied in the treatment of traumatic injuries, acute infectious diseases, and chronic diseases with acute complicating factors.
2. The spread of disease must be prevented to keep the incidence of illness as low as possible.
3. The period of illness must be shortened in order to release the hospital bed and return the patient to the community work force as soon as possible.
4. Crippling or hazardous complications of illness must be prevented.
5. Suffering must be alleviated and the spread of emotional upset prevented.

The simpler the plan, the more readily it will be understood and accepted by the staff. It must be flexible enough to permit rapid adjustment to emergency conditions which can never be entirely anticipated.

The head nurse is, of course, responsible for seeing that her ward plan is carried out. This should not be difficult if she has made the proper assessment of needs and resources. If difficulties arise, she should be prepared to alter her plan in accordance with a more realistic evaluation of the situation.

A nursing care plan for each patient and an activity plan for each nursing team are the basis of coordinated and efficient ward operation. If paper and pencils are lacking, these plans will have to be issued orally. They should be specific enough to let everyone know exactly what she is expected to do.

B. WARD LAYOUT

The most probable ward arrangement will be two rows of cots with the nurse's station at one end or in the center, depending on which will permit the best service to patients. The most acutely ill patients should be closest to this station so they can be constantly observed and so that medications and supplies for their care are readily available. This station may be nothing more than a packing case with another packing case for a chair. It may have to serve, also, as a storage cabinet for medicine glasses, hypodermic equipment and other supplies.

The nurse's station is also the logical center for exchanging messages and receiving supplies. Custodial and housekeeping personnel should report here when they complete one assignment and are available for another.

C. ADMISSIONS

Standing orders for newly-admitted patients may have been made by the chief of the medical staff and a standard form may have been designated. If not, the nurse may wish to devise a form for the use of her staff. Regardless of how the treatment and medication orders are given, the professional nurse is responsible for seeing that they are carried out.

The professional nurse may have to delegate some ward admitting functions to the practical nurse or even to a capable medical aide. She should, nevertheless, try to see each patient in her unit daily. When a patient is admitted, she should check his clinical record and give or arrange for such treatment and medication as has been ordered.

D. BEDSIDE CARE

Each bedside activity will have to be planned to conserve time, energy, and limited supplies and at the same time to sustain and comfort the patient. This care is likely to be restricted to the specific and simple treatment of immediate needs. Adaptability and improvisation will be required of all personnel to make the best of disaster conditions. Everyone working with

patients should know what medical asepsis is and how to achieve it—or the nearest possible asepsis—in emergency conditions and how to carry on in septic conditions. Each ward staff member must know how to provide bedpan and urinal service and how to dispose of waste.

E. TREATMENT AND MEDICATIONS

Treatment and medications should be given by professional or practical nurses. If neither is available, the best trained medical aide can be given this duty. If necessary, someone can be trained on the spot to carry out simple treatments. When properly trained help becomes available, the less qualified person should be reassigned to other duties.

The simplest plan for giving medications may be to keep the entire stock of medicines for the day in a box or tray and take it on complete ward rounds at specified times. The person dispensing medicines can stop at each cot, read the patient's order, select the proper medicine from the supply, put it directly in the patient's hand or mouth and record it immediately on the patient's chart. With 20 to 60 or more patients, the person in charge of medications may spend almost full time giving medicines, recording them, and ordering new stock through whatever system is established.

F. RECORDS

The PDH administrative staff will decide upon the system to be used in keeping records. The importance of patients' clinical records should be impressed on all PDH personnel, particularly all nursing team members. Identification tags noting where the patient was found and the treatment he received should be made by the first person to reach him. These tags should be attached to the patient's body, not to the stretcher or his clothes. A record should be made of the personal belongings a patient has with him. These may be the only things he has left and they also may be the only means of identifying him if he is unconscious.

Necessary Information

The ward staff will be very busy and there will be little time for maintaining the thorough records of a normal hospital organization. Daily ward reports, census sheets and other paperwork to which the nurse is accustomed will be at a minimum. Some information, however, must be recorded, even in the greatest emergencies. There should be a chart for each patient, although chart racks may have to be improvised or dispensed with. Notations of temperature, pulse, respiration, and blood pressure should

be made as regularly as possible and medication and treatment must be recorded. It is advisable that the person who gives the medication or treatment record it at once. Information such as laboratory and X-ray reports will probably be prepared in those sections of the hospital and a copy kept with the patient's record.

Much of this work can be done by ward helpers and the head nurse may have to teach it to them on the spot. If so, she may find it most efficient to set aside a time to teach several people in her unit at once.

G. INSTRUCTIONS ON AFTER-CARE

In normal times, the professional nurse helps to teach patients and their families how to continue care after the patient is well enough to leave the hospital. In the PDH, patients may move through too quickly for this type of teaching to be done in much detail, but even the most temporary patient should be given some instruction in self-care. The nurse can do this even in the few minutes of direct contact she has with the patient while giving his treatment. Under disaster conditions, this instruction could prove lifesaving.

When the patient is discharged, the nurse should see that he has a record of the treatment he has received and a list of his special needs. This will facilitate any further care and treatment he may need after he leaves the hospital.

H. ORDERING SUPPLIES

The professional nurse, practical nurse, or medical aide (in that order) should order medicines, equipment and other supplies. If the PDH sets up a system of taking daily inventories of such supplies and maintaining them, this will free nursing personnel for direct care of patients. It also permits better control of expendable materials. Nurses have a tendency to hoard some items against future need and the limited supplies provided in the PDH will not allow this.

I. WARD ENVIRONMENT

Helpers should be instructed in a routine for keeping the ward environment as comfortable as possible. This may be difficult in a disaster situation but it is very important for both the patients and staff.

1. Ventilation

The odor which will result from massive wounds and burns can actually hinder work and even affect the patients' condition and morale. If ventilation cannot be satisfactorily maintained, the use of activated charcoal or some other air purifier (not a product which merely scents the air) should be considered.

2. Housekeeping and Laundry

The PDH administrator will decide what arrangements are to be made for housekeeping and laundry services. Attention should be given to working in as neat and orderly a manner as possible because this will lighten the housekeeping burden and encourage the prudent use of supplies. Linens must be used conservatively throughout the emergency because the hospital's supply is very limited. (For example, the 200-bed Series 62000 PDH contains only 400 sheets 360 hand towels, 480 pillowcases, etc.)

3. Waste Disposal

The decision of how waste disposal is to be handled is a supervisory responsibility. The head nurse may have to instruct the nursing team in the proper handling of waste and proper disposal methods. Because nurses will be on duty around the clock and are familiar with hospital routine, they will be aware of this continuing requirement and must be prepared to meet it themselves if no one else is available to take care of it.

4. Electricity

The PDH is equipped with emergency generators which can supply sufficient power for the hospital's most important requirements should the community power supply be shut off. This emergency power supply will permit no nonessential lights. In the Series 62000 PDH, there are 15 gasoline lanterns and the nurse may well find herself faced with one of these as her only light in the ward. She will do well to learn before hand how to operate such a lantern and also to have in mind other possible emergency measures (such as her own flashlight or an old-fashioned kerosene lamp).

5. Water

Whether the disaster is natural or caused by attack, lack of water may be a major problem. The PDH is equipped with a portable 1,500-gallon water tank and a pump which permits the hospital to be self-sufficient if community water lines are disrupted. This will, however, supply only the most imperative needs, and strict conservation will be necessary. Avail-

ability of water is an important point to consider in predisaster planning, as well as during the hospital's operation, because it affects so many ward duties.

Scarcity of water can mean both unwashed patients and unwashed staff—neither being very readily accepted by those accustomed to the modern hospital. It is, nevertheless, possible to give expert care without washing a patient.

Bed baths, daily oral hygiene, and shaving may not be possible. Nurses will have to devise comfort measures which do not depend on water—a dry rub with a towel instead of a bath; chewing gum (if it is available) instead of brushing teeth.

TEAM NURSING

A head nurse will be in charge of several professional nurses, a few practical nurses, and a larger number of medical aides. It will probably be most efficient to make up teams consisting of one professional nurse as team leader and several medical aides whose work she will supervise. If there are enough practical nurses, one can be assigned to each team. If not, those who are available can circulate to the teams which need them most at the time.

The head nurse's unit may be several small wards, each of which can be staffed by one team, or one large area in which all the teams will work. Specific patients should be assigned to each team and the team leader will be responsible for a continuing evaluation of their condition. She will also be responsible for appraising the quality of her team's work.

The team pattern will vary according to the needs of the patients in the unit, the physical arrangement of the unit, and the head nurse's familiarity with team planning. The professional nurse will give as much direct patient care as the workload permits, but she will have to delegate tasks to various team members according to their abilities and the needs of the patients.

A. PREDISASTER PRACTICE

Frequent drills in team activity as well as training exercises which simulate disaster conditions help the nursing team members become familiar with their assignments and with working together. The resulting coordination helps each member become so adept at her job that her actions are almost automatic. Good nursing is built, in large part, on these automatic skills which are the product of thorough training and long practice. Team work which has become deft and automatic enables the members to answer questions and work out problems without interrupting their actual physical care of patients.

B. ON-THE-SPOT ORGANIZATION

If the team has had no predisaster practice, it will have to be organized and drilled in actual operation. The head nurse will be responsible for assigning duties—and reassigning them if necessary—until the team becomes a productive entity. She must be prepared to give on-the-spot training. All PDH personnel will have to adapt their skills to meet frequent changes in

personnel, limited supplies and equipment and severe emotional stress. Those in supervisory positions however, will be the ones who must solve the problems these conditions generate. One solution is to keep the team members as versatile as possible so that they can interchange tasks as needs dictate.

C. ASSIGNING DUTIES

The head nurse will know, either through previous practice sessions with her team or from reports of their past activities, what each person assigned to her unit can do. Helpers who have had Medical Self-Help training, American Red Cross home nursing or nurses' aide training will be especially valuable because they will require less time to train on the job. Those team members with no experience or training in patient care can do clerical work, help feed patients, perform messenger and housekeeping services, transfer and escort patients, check and record patients' personal property, and similar tasks.

Untrained, unskilled personnel work more efficiently if they know exactly from whom they are to receive their instructions. This avoids the disorganization which can result when a helper leaves an assignment unfinished to follow instructions issued by someone else.

As work progresses, special abilities will become apparent and some reassignment of duties will be indicated. The general plan of patient care should remain unchanged, however. Thus, if medications are given at 10 a.m., the time will remain the same even if a new person is assigned the duty.

Assignments must be made on the basis of using the special training and experience of skilled persons where they are most needed. Although a professional or practical nurse may be able to perform some tasks with more skill and speed than an auxiliary worker, routine tasks such as taking temperature, pulse, respiration, and blood pressure may have to be delegated so that the professional nurses can give direct care. Aides and helpers can be taught the simpler tasks and the head nurse will soon see that time spent in giving such instruction is a good investment as it frees the more skillful staff members for tasks where their experienced judgment is needed. The nurse in charge of a ward may find that some of her untrained helpers will show a natural bent for nursing which she should be prepared to utilize to the fullest.

D. ASSIGNMENTS BY FUNCTION

While team nursing is suggested as the most satisfactory way to provide the best possible care and treatment, disaster conditions may require that other arrangements be made. It may be that one person will have to be assigned to give treatments to all new admissions, another to give medications, and two or three others to give physical care. Practicality is the order of the day in disaster work and the nurse in charge of a unit must decide what system will be most effective in her particular situation.

WARD SCHEDULE

A. PERSONNEL

In the first days of PDH operation, the only way to provide adequate coverage will probably be to schedule personnel on two 12-hour shifts a day, stressing the need for meal and rest periods. As soon as the pressure of work lessens, the head nurse should arrange for a day off for each of her staff members.

A simple way to set up a 6-day week schedule is to designate one relief person for each six persons on the ward. This will allow everyone a full day off each week. To provide time off for meals and rest periods without depleting ward coverage, it may be a good idea to put a practical nurse and some of the medical aides on a relief shift to be on duty over the hours when the peak workload is expected. When a 3-shift day, 5-day week becomes feasible, the 2-shift schedule can be altered by designating more relief personnel.

The head nurse should make out a staff schedule, posting it on a bulletin board, wall, blackboard, or even writing it on the side of a packing case if necessary. This will let anyone know at a glance how many people are on duty at the time and will give relief personnel a reminder of how their assignment rotates from day to day.

The greatest number of highly skilled personnel should be assigned to the period when the workload is heaviest. At least one of the most highly skilled persons should be on duty at all times. For example, it would be inefficient and would increase pressure to give two professional nurses the same hours off duty if that meant there would be a time when only a practical nurse was available.

1. Relief Personnel

Personnel should be relieved by personnel of equal training. When this is impossible, a rule of thumb is that better trained personnel may have to relieve lesser trained but no one should be assigned a relief duty which requires performance beyond her capability. Thus, a professional nurse should be relieved by another professional nurse whenever possible. Sometimes a practical nurse may have to be relieved by a professional nurse, and the practical nurse may have to relieve a medical aide. Medical aides, how-

ever, should relieve no one but other aides. This safety rule may have to be broken in an emergency, but it should be considered in all scheduling.

2. Rest Periods

Some rest periods are necessary, although they probably cannot be scheduled at a definite time each day. If a rest area can be arranged, this is most helpful. A spot within the hospital but removed from the work area provides the hospital staff with an opportunity for a cup of coffee and a few minutes of relaxation. The head nurse must see that those under her supervision take these breaks and she must take them herself.

3. Change of Shift

As the shifts change, all on-coming staff should be at the nurse's station promptly to hear the off-going nurse in charge report on her tour of duty. She will cover admissions, discharges, deaths, treatments, medications, and special details on the condition of the patients and ward. While this report is being given, the off-going medical aides remain at work until the on-coming aides have heard the report and take over their duties. Nurses or team leaders may confer further with the head nurse before they report to their stations. If a relief shift comes on duty during a regular shift, the head nurse on duty will give them a report and make assignments.

The head nurse should announce her plans for the general daily routine after she hears the report from the staff going off duty. The team leader should hear these instructions and know the assignment of each team member. Anyone who thus knows the requirements of the patients in her care will be aware of tasks left undone in the absence of a team member and can see that some arrangements are made for handling them.

4. Substitutions

Plans which seem efficient in theory may go awry in practice because of the human quirks which make individuals of every person—staff member or patient. Someone must be ready to substitute for those who, for any reason, cannot carry out their assigned duties. Secondary assignments within the range of each individual's abilities are suggested. That is, Person A will have tasks she is to carry out in the absence of Person B. These will not be her usual tasks but they must be within the range of her ability. The head nurse must check on the staff's awareness of and ability to perform these secondary duties.

B. ACTIVITIES

A time schedule for personnel has little meaning if ward activities are not also scheduled. A definite schedule is the best way of assuring that

necessary tasks are performed. Also, old-fashioned as the idea may be to some, there is value in maintaining fixed routines for giving medications, for treatments, for serving meals, and for offering bedpans and urinals. In the badly disrupted situation following a disaster, such predictability may well be the one reality patients and staff can rely on until some degree of normal living is restored.

The following 24-hour schedule is offered only as a guide. It will have to be altered to fit existing conditions.

- 7:00 A.M. Conference or morning report.
 - Check ventilation and other environmental factors.
 - Offer bedpans and urinals.
 - Wash patients' faces and hands if possible.
- 7:30 A.M. Breakfast, supervise feeding.
- 8:00 A.M. Collect meal trays.
- 8:30 A.M. Check and chart patients' TPR and BP.
 - Start treatments.
 - Check charts and reports, supplies and equipment.
- 9:00 A.M. Give medications and chart them.
- 10:00 A.M. General cleaning.
 - Continue treatments, dressings, etc.
- 11:00 A.M. Bedpan/urinal service.
- 12:00 N Noon meal. Supervise feeding.
- 12:30 P.M. Collect meal trays.
- 1:00 P.M. Medications.
 - Treatments.
 - Bedpan/urinal service.
- 2:00 P.M. Check and chart TPR and BP.
 - Treatments.
- 3:00 P.M. Distribute special liquids.
- 4:00 P.M. Special cleaning.
- 5:00 P.M. Evening meal. Supervise feeding.
- 5:30 P.M. Collect meal trays.
- 6:00 P.M. Medications.
 - Incontinent care.

7:00 P.M. Make final rounds.

8:00 P.M. Give medications.

9:00 P.M. Bedpan/urinal service.
Treatments.
Check vital signs and record them.

10:00 P.M. Lights out.
From now until 7:00 A.M., make complete rounds of assigned area every hour, or more often as needed, giving medications, treatments, incontinent care, and bedpan service as needed. Check ventilation and environment regularly on these rounds.

1. Coordination

It is helpful if each section of the PDH is aware of the needs of other sections so that schedules can be coordinated as much as possible. The nursing department should explain its particular need for fairly rigid schedules to the rest of the PDH staff. For instance, it is advisable for patients to be on the same meal schedule as X-ray, laboratory, and pharmacy personnel. Thus, patients will not be scheduled for X-rays or laboratory work precisely at mealtime, nor will time be wasted by sending to the pharmacy for medications when the pharmacy attendant is out. This arrangement also helps the dietary personnel organize their work with less need for special meal service for those absent from the ward at the regular mealtime.

2. Routine

Definite routine facilitates assignments, relief activities, and rest periods and allows the work of the ward to proceed smoothly. Lack of organization can easily lead to chaos. Routines may have to be altered or temporarily abandoned, depending on circumstances. Nevertheless, the skeleton of a routine helps the staff know what has to be done and gives some pacing to bedside care.

IMPROVISATION

Knowing what must be accomplished is the first step in improvisation. The professional nurse's training has shown her both the "how" and the "why" of treatment and this should enable her to find substitutes for equipment and supplies which are not available.

Inventive people will find that splints, traction, weights, protective bed padding, bedpans, containers, simple sheet restraints, suction apparatus, and emergency litters usually can be improvised with materials at hand. Predisaster reading will produce good ideas. Many books (among them, the American National Red Cross Home Nursing Textbook) give directions and pictures of items which can be improvised from common articles. It must be kept in mind, however, that some things such as straight chairs or large quantities of newspapers may not be available in the building where the PDH is set up.

All crates and boxes from which PDH supplies are unpacked should be saved for possible use, as should rope, twine, heavy paper, plastic bags, and other packing material. Wooden crates can be used as tables, desks and storage cabinets. Heavy cardboard boxes can serve as bedside tables and desks. They also can be put under the legs of a cot to elevate a patient's head or feet as needed. The bags and envelopes in which many small PDH items are packaged can be used as containers for patients' small personal belongings.

The heavy cardboard tubes from large rolls of adhesive tape make good splints or arm boards. An eyeglass case can be made from the cardboard tube from a roll of toilet paper and the owner's name can be written on the tube. These tubes make protective containers for other items—scissors, for instance. And remember: the first stethoscope was nothing more than paper rolled into a tube!

A. NEWSPAPERS

Newspaper can be used for bed padding and can even be made into an improvised bed pan or drainage pad. For this, lay many single sheets of newspaper so that they form a circle. Roll the edges into a tight rim (fig. 1). It should take about a half an hour for liquid to soak through such a container.

Newspaper can also be folded into bags to use as waste containers (fig. 2). Such bags can be pinned to the cot within easy reach of the patient.

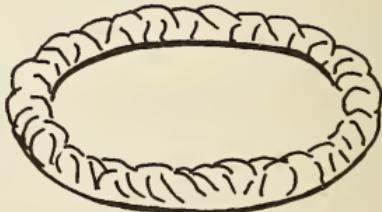
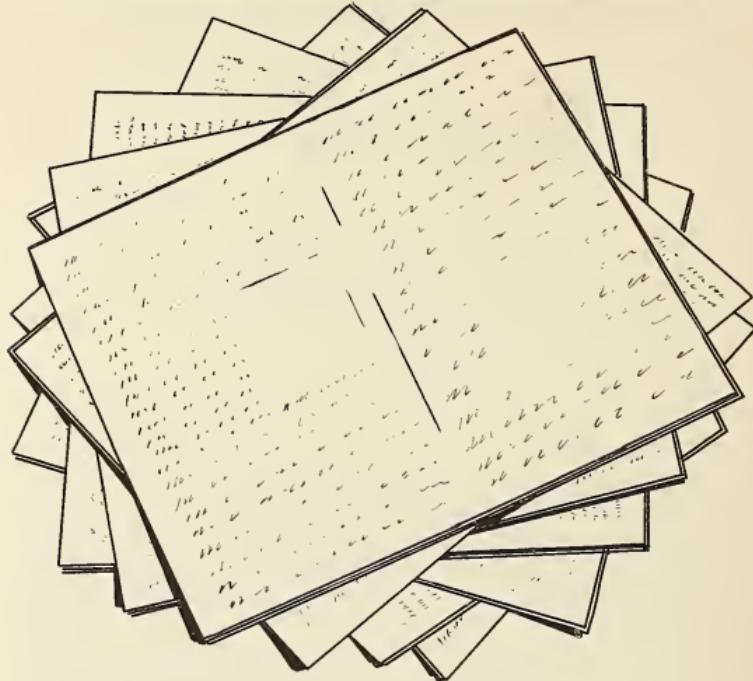
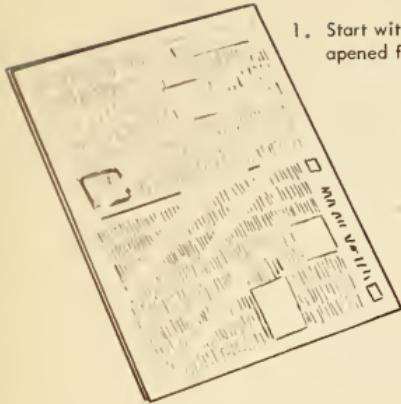


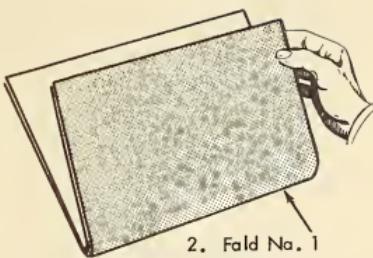
Figure 1.—Newspaper Bedpan.

B. TIN CANS

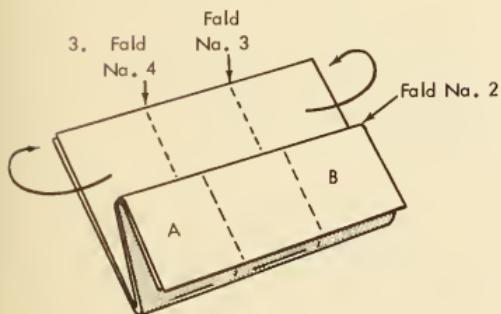
In addition to their obvious use as emergency pitchers and pans, tin cans which have been opened so that they have no rough edges can be used as urinals, commodes, and wastebaskets. Should the hospital be using beds with straight legs, the bed can be made higher by setting its legs in tin cans which have been partially filled with sand or pebbles. (For this, save the top of the can when it is cut out to put on top of the sand for a firm surface.) Cans filled with sand can also be used as weights for traction.



1. Start with double sheet
opened flat.



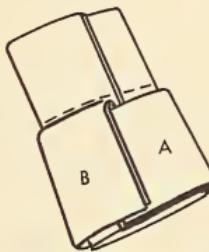
2. Fold No. 1



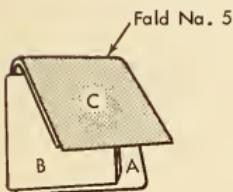
3. Fold
Na. 4

Fold
Na. 3

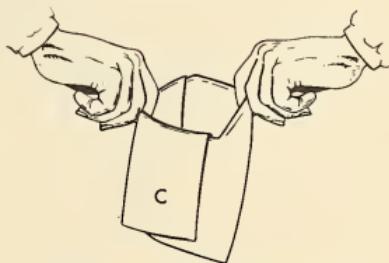
Fold Na. 2



4. Turn paper over and
tuck A into B



5. Fold C over A & B



6. Finished bag will stand alone, or
flap C can be pinned to cat.

Figure 2.—Newspaper Wastebag.

C. CARDBOARD BOXES

Overbed tables and lapboards can be cut from heavy boxes (fig. 3). A pillow placed on one of these overbed tables provides a support for patients with distressed breathing who must sleep in a sitting position. A larger box cut in the same way can be used as a bed cradle. Placed under the sheet and blanket, it keeps the weight of the bedding off the patient's body.

Scraps of boxes can also be used at the foot of a cot to hold the covers off the patient's feet.

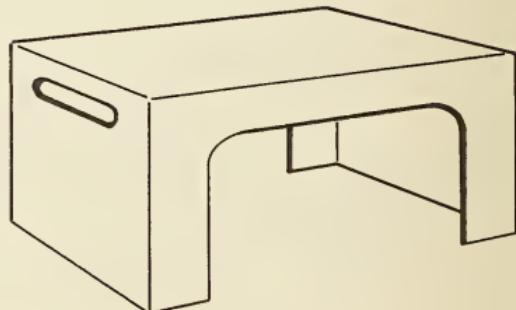
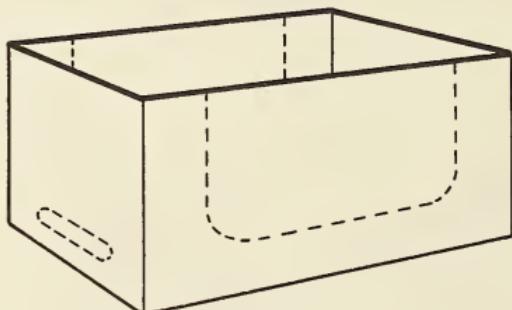


Figure 3.—Overbed Table.

Backrests can be made from heavy cardboard boxes (fig. 4). Score and fold the box on the dotted lines in the order indicated by the numbers. Tape as indicated. Similar wedges of various angles can be made to provide elevation of feet or of an injured limb. Because there will be few extra pillows in the PDH, this method of supporting patients will be very useful.

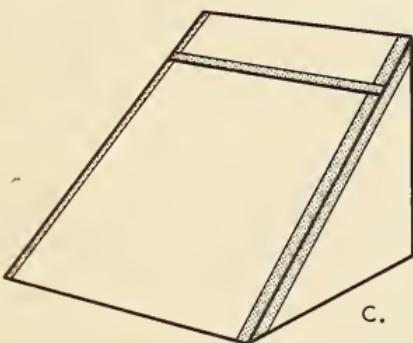
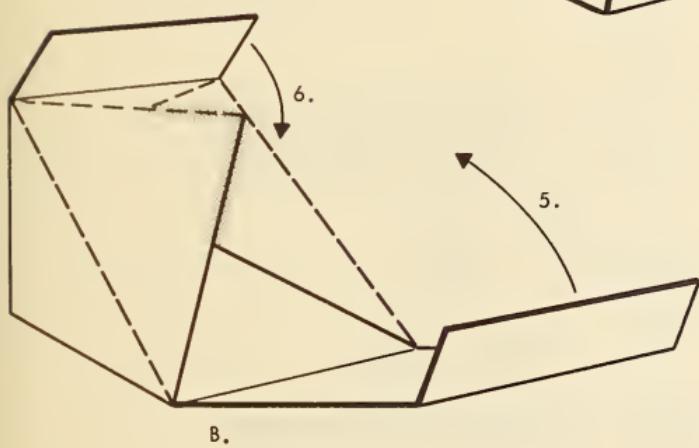
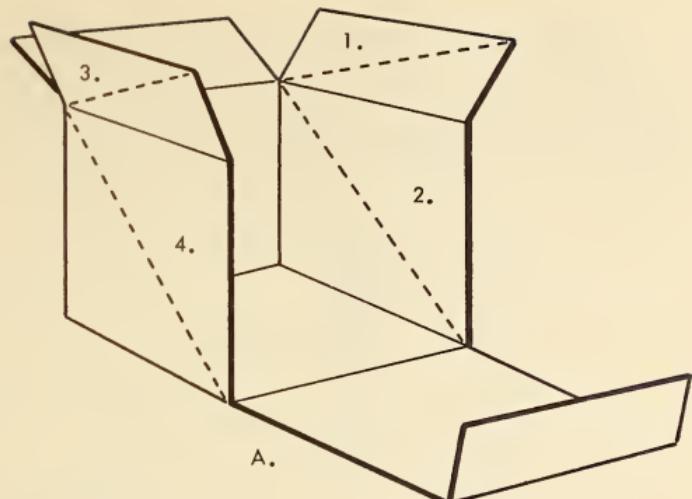


Figure 4.—Backrest

To make a bedpan, a small, heavy cardboard box can be cut to contain a washbasin (fig. 5). After use, the basin is easily removed for emptying and washing. Unless it is soiled, the box can be kept for repeated use. A washbasin can be used without the box, of course, but the box gives added support to the patient and prevents spills and soiled bedding.

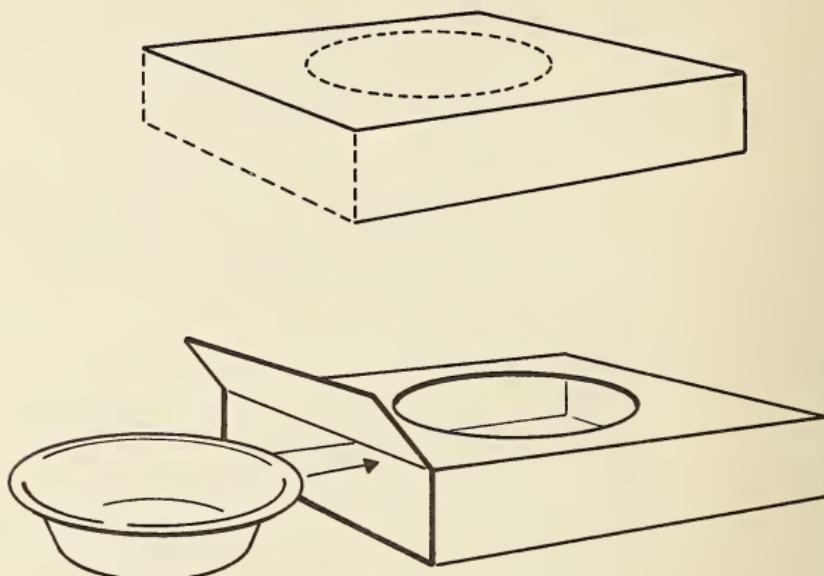


Figure 5.—Bedpan.

D. AN EMERGENCY WANGENSTEEN APPARATUS

For the relief of acute distention, an emergency Wangensteen suction apparatus for drainage can be devised as shown in figure 6. To make it, the following items are needed:

- 2 large bottles (such as the gallon bottles furnished in the pharmacy section)
- 2 tightly fitting corks for the bottles
- 2 glass tubes, one about 10 inches long, the other 7 inches or less
(Glass tubing is not furnished in the PDH.)
- 2 rubber tubes, one about 3 feet long, the other about 5 feet, of a diameter to fit the glass tubes
- Length of bandage or cord with which to hang one bottle.

Make a hole to fit the rubber tube in one of the corks and two holes to fit the glass tubes in the other cork. Fit the 3-foot rubber tube onto the shorter glass tube and the 5-foot rubber tube onto the longer glass tube.

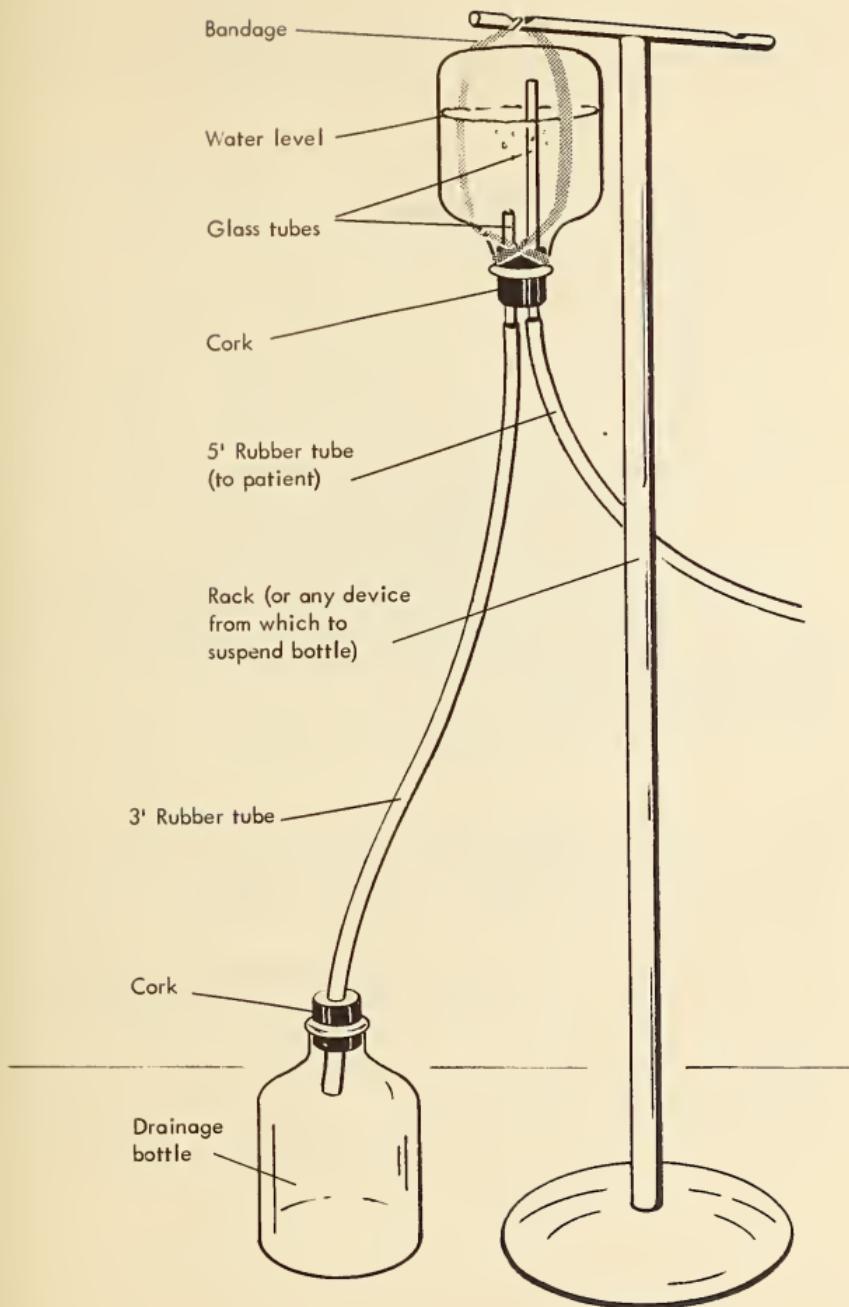


Figure 6.—Emergency Wangensteen Apparatus.

Insert both glass tubes in the cork. Then insert the other end of the 3-foot rubber tube into the other cork. At this point, temporarily clamp the rubber tubes closed or fold them and tie the fold with a piece of cord or a rubber band.

Tie a piece of bandage or cord around one of the bottles so that it can be hung, inverted, from a nail, a coat rack, or an I.V. stand above bed level. Fill the bottle about three quarters full of water and insert the cork with the two glass tubes. Invert and hang the bottle. The end of the shorter glass tube should be in the water, extending an inch or so beyond the cork. The longer glass tube should be above the water line. Insert the other cork holding the rubber tube into the second bottle and set this bottle on the floor.

Be sure the tube in the water goes directly to the drainage bottle on the floor. The longer rubber tube goes from the patient to the upper bottle. To establish suction, release the clamps or whatever is holding the rubber tubes closed. As the gas or liquid causing the distention is released, it will displace the water in the upper bottle. This suction will usually maintain steady enough drainage to relieve and control the distention.

The upper bottle will have to be refilled and the lower bottle emptied. If the distention is caused by gas only, the same water can be poured from the lower bottle back into the upper bottle. If the water is mixed with feces or other body fluids, it must be discarded as a body waste and fresh water used to refill the upper bottle.

APPENDIX

Preparatory Reading List

Health Mobilization Series P.H.S.P. No. 1071.³

- A-1 Emergency Health Preparedness Publications Catalog
- A-2 Community Emergency Health Preparedness
- D-1 Austere Medical Care for Disaster
- D-3 Disaster Nursing Preparation in a Hospital Nursing Service
- D-5 Disaster Nursing Preparation in a Basic Professional Program
- F-1 Establishing the Packaged Disaster Hospital ⁴
- F-3 Central Supply Section of the Civil Defense Emergency Hospital
- F-4 Laboratory Section of the Civil Defense Emergency Hospital
- Checklist for Developing a Civil Defense Emergency Hospital Utilization Plan

First Aid, Fourth Edition. American National Red Cross, Revised 1957.

The Head Nurse. Jean Barrett. Appleton-Century Crofts, N.Y., 1962.

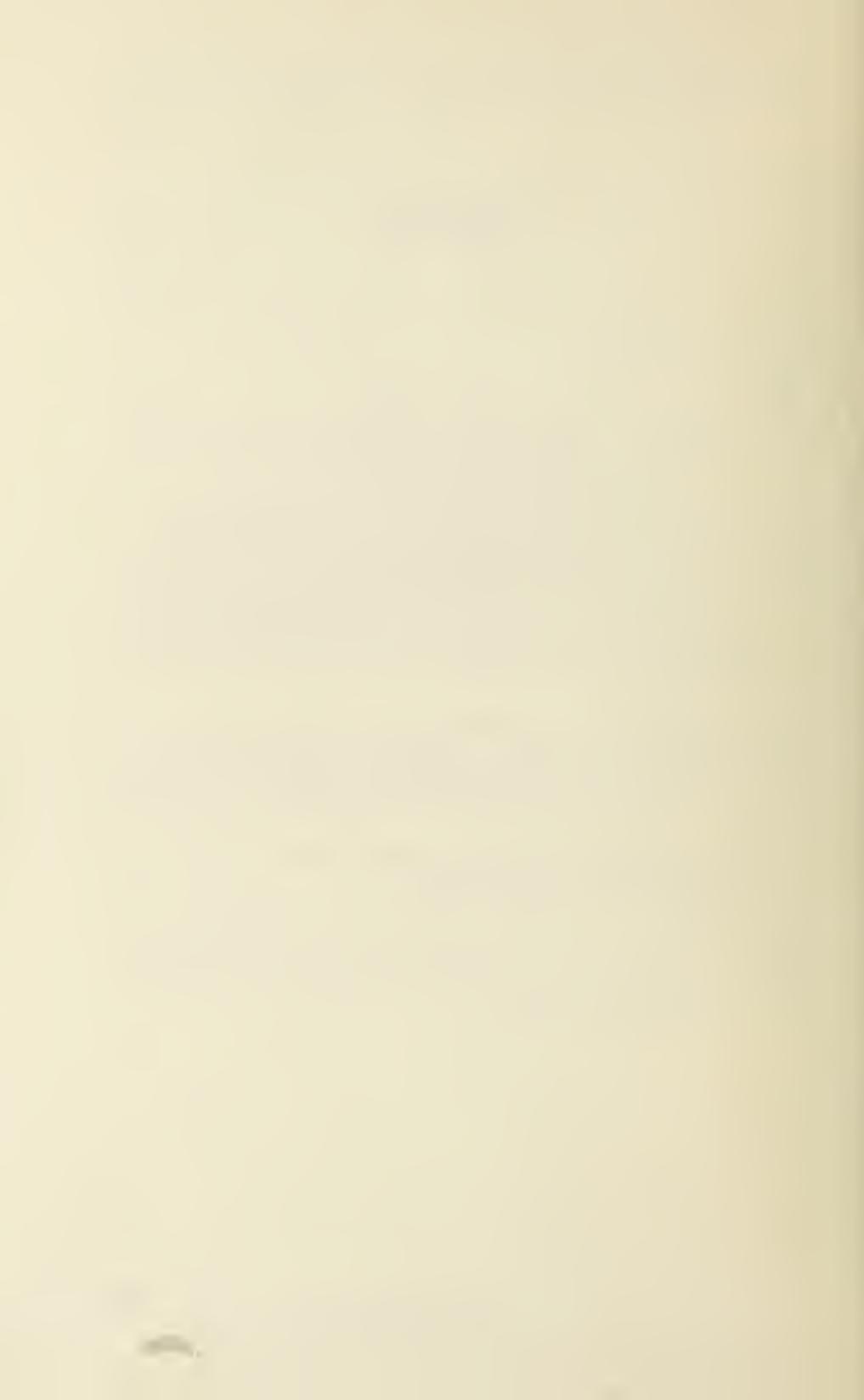
Nursing Team Organization and Functioning. Eleanor C. Lambertsen.

Bureau of Publications, Teachers College, Columbia University, N.Y., 1953.

Principles of Administration Applied to Nursing Service. H. A. Goddard. World Health Organization, Geneva, 1958.

³ These Public Health Service publications are available, upon request, from your State Health Department, State civil defense office, or Division of Health Mobilization, Public Health Service, Washington, D.C., 20201.

⁴ Formerly called the Civil Defense Emergency Hospital. Other Health Mobilization Series publications will reflect this name change as they are reprinted.





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Publications in the Health Mobilization Series are keyed by the following subject categories:

A—Emergency Health Service Planning

B—Environmental Health

C—Medical Care and Treatment

D—Training

E—Health Resources Evaluation

F—Packaged Disaster Hospitals*

G—Health Facilities

H—Supplies and Equipment

I—Health Manpower

J—Public Water Supply

*Formerly called Civil Defense Emergency Hospitals

Public Health Service Publication No. 1071-F-12